

## **NARRATIVE**

TO: Jeng-Hon Su  
FROM: Dawn Wu  
DATE: March 31, 2023

Facility Name: **Bekaert Corporation**  
AIRS No.: 115-00068  
Location: Rome, GA (Floyd County)  
Application #: 28689  
Date of Application: March 9, 2023

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### **Background Information**

Bekaert Corporation (hereinafter, "facility") is an existing facility which manufactures steel wire cord and bead wire. The facility is located at 301 Darlington Drive SW in Rome Georgia (Floyd County). Floyd County is in attainment for all pollutants.

The facility's production process includes drawing, plating, and cabling to produce steel wire cord (IBW and OLW types) used to reinforce tires and hoses. Wire that has undergone second stage wire drawing is heated in a molten lead bath to reduce stress. It is then cleaned, rinsed, pickled using HCl and an inhibitor (hexamethylene), plated with tin sulfate and copper sulfate, rinsed and dried. The wire is coated with a polymer resin to give it a sticky surface. The coated wire is then packaged for shipment. The Cumar Coating Process is part of the production on the A Line, B/C Line, and D Line at Bekaert.

Bekaert is a synthetic minor facility and currently operates under Permit No. 3496-115-0068-S-06-0, which was issued on December 17, 2015.

### **Purpose of Application**

The Division received Application No. 28689 on March 9, 2023. This Application requests to vent insignificant amount of VOC emissions directly into atmosphere (without RTO control) during malfunction to prevent explosion. No Public Advisory is required.

### **Updated Equipment List**

No emission units are added or modified.

### **Emissions Summary**

There are no changes to PM, SO<sub>2</sub>, NO<sub>x</sub>, or CO emissions due to this application.

**Facility-Wide Emissions**  
(in tons per year)

Pollutant	Potential Emissions			Actual Emissions		
	Before Mod.	After Mod.	Emissions Change	Before Mod.	After Mod.	Emissions Change
PM/PM <sub>10</sub> /PM <sub>2.5</sub>	--	--	0	--	--	0
NO <sub>x</sub>	--	--	0	--	--	0
SO <sub>2</sub>	--	--	0	--	--	0
CO	--	--	0	--	--	0
VOC	<100	<100	--	<100	<100	--
Max. Individual HAP	<10	<10	--	<10	<10	--
Total HAP	<25	<25		<25	<25	
Total GHG (if applicable)	--	--	0	--	--	0

This Application requests to vent insignificant amount of VOC emissions directly into atmosphere (without RTO control) during malfunction to prevent explosion. The emissions resulting from the venting of the trapped gases per time can be calculated as follows:

Length = 186 feet

Radius = 11 inches, or 0.917 feet

Volume of gas =  $3.14 \times 0.917 \times 0.917 \times 186 = 491.11 \text{ ft}^3$

Density of VM&P Naphtha =  $3.5 \text{ (specific gravity)} \times 0.0763 \text{ lb/ ft}^3 \text{ (density of air)} = 0.267 \text{ lb/ ft}^3$

$491.11 \times 0.267 = 131.1 \text{ lbs or } 0.066 \text{ tons}$

There is no change in potential VOC emissions or potential HAP emissions since the permitted limits of less than 100 tpy of VOC and less than 10 tpy of any single HAP and/or less than 25 tpy of any combination of HAPs are not changed. Any uncontrolled VOC emissions released during an emergency situation would be accounted for in monthly and annual emissions calculations.

### **Regulatory Applicability**

There are no regulatory applicability changes due to the requests in this application.

### **Permit Conditions**

Condition 4.2 has been modified to allow the facility not to operate the Regenerative Thermal Oxidizer during malfunctions.

Condition 7.2 has been modified to include uncontrolled VOC emissions released during malfunctions.

**Toxic Impact Assessment**

A toxic impact assessment was performed by the facility.

The following compounds and their percentages by weight are found in cumar:

Distillates, Petroleum Light – 68.27%  
 2-propanone – 26.24%  
 Benzene, Dimethyl (Xylenes) – 1.49%  
 Benzene, Ethyl – 0.38%  
 Benzene, Methyl (Toluene) – 0.02%  
 Other (below reportable) – 3.62%

**Emissions Calculations**

Total Cumar Usage

Density of cumar = 6.24 lb/gal

Total usage of cumar = 224,939 liters/yr

224,939 liters/year x 0.264172 gal/liter = 59,422.59 gal/yr

59,422.59 gal/yr x 6.24 lb/gal = 370,796.93 lbs/yr, or 185.40 tpy

Amount applied to wire:

Cumar applied at a rate of 156 mg/kg product, or  $(156 \text{ mg/kg}) \times (907.185 \text{ kg/ton}) \times (\text{lb}/453,592.37 \text{ mg}) = 0.312 \text{ lb cumar applied/ton of wire produced}$

2022 wire production = 43,049 tons/yr

43,049 tpy x 0.312 = 13,462 lbs applied/yr = 6.73 tons cumar applied/yr

Amount Collected / Hauled as Waste = 6.176 tons/yr

Total emitted (uncontrolled)

$185.32 - 6.73 - 6.176 = 172 \text{ tpy or } 345,000 \text{ lbs/yr}$

XYLENES:  $345,000 \times 0.0149 = 5,140 \text{ lb/yr}$

ETHYL BENZENE:  $345,000 \times 0.0038 = 1,310 \text{ lb/yr}$

TOLUENE:  $345,000 \times 0.0002 = 69.0 \text{ lb/yr}$

TAP	Total PTE (lb/yr)	MER (lb/yr)	BELOW MER?
Xylenes	5.14E+03	2.43E+04	Yes
Ethyl Benzene	1.31E+03	2.43E+05	Yes
Toluene	6.90E+01	1.22E+06	Yes

All Toxic Air Pollutants (TAPs) were below their respective MER, and therefore no modeling was required.

**Summary & Recommendations**

Bekaert Corporation in Rome is considered a synthetic minor source due to 100 tpy facility wide emission limit on VOC, 25 tpy emission limit on combined HAPs and 10 tpy emission limit on any single HAP. The Public Advisory was not needed for this application. As a synthetic minor source, compliance responsibility is assigned to Mountain District (Cartersville) Office. I recommend the issuance of Air Permit Amendment No. 3496-115-0068-S-06-1 to Bekaert Corporation in Rome.